



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/776,164

02/12/2004

Brent G. Duckering

16321-US

3780

23553

7590

02/04/2005

MARKS & CLERK

P.O. BOX 957

STATION B

OTTAWA, ON K1P 5S7

CANADA

EXAMINER

PHUNKULH, BOB A

ART UNIT

PAPER NUMBER

2661

DATE MAILED: 02/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/776,164

Applicant(s)

DUCKERING ET AL.

Examiner

Bob A. Phunkulh

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 14-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 14-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |                                                                                                                        |                                                                                         |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                            | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____                                                |

### **DETAILED ACTION**

This communication is in response to applicant's 09/29/2004 amendment(s)/response(s) in the application of **Duckering et al.** for "**FAIR SHARE SCHEDULING OF MULTIPLE SERVICE CLASSES WITH PRIORITIZED SHAPING**" filed 02/12/1998. The amendments/response to the claims have been entered. Claims 1-13 claims have been canceled. Claims 14-19 have been added. Claims 14-19 are now pending.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duffield et al. (US 6,452,933), hereinafter Duffield.

Regarding claim 14, Duffield discloses a method for limiting a rate at which a connection is serviced at a queuing point for a plurality of connections, the method comprising:

arranging messages from the plurality of connections into a plurality of queues (each queue established for receiving packets from a respective source, see figure 2);  
determining whether a connection, of the plurality of connections, exceeds a rate limit defined for the connection;

determining, using a shaper, when the queue containing a message for that connection is to be serviced if the connection exceeds its rate limit (a shaper device, 30a, . . . ,30i associated with each queue, see figure 2 and col. 4 lines 6-27; it should be note that when there are packets in the RPS scheduler, it's determined by the examiner as each connections exceeds their defined rate limit, see col. 4 lines 63-66);

otherwise determining, using a fair scheduler, when the queue containing the message for that connection is to be serviced (if it is determined that there are no packets in the RPS scheduler, then this is an indication of free bandwidth. Thus, packets may be served by the SDS 200 based on a state dependent manner, see col. 4 lines 63-66)

Duffield fails to explicitly disclose that the state dependent server 200 is a fair scheduler.

However it would have been obvious to one having ordinary skill in the art at the time of invention was made to switch RPS 40 (weighted fair queuing server 40) with the SDS 200 in Duffield for WFQ scheme provides beneficial properties such as end-to-end delay guarantees, e.g., each packet is guaranteed a certain rate for each packet flow in the stream, and, the provision of isolation between streams, e.g., a misbehaving source will not effect the flow of other streams.

Regarding claim 15, Duffield discloses the plurality of connections have traffic descriptors associated therewith (each per connection flow is guaranteed its specified

share of the link bandwidth with any excess bandwidth being adaptively redistributed, see col. 3 lines 13-29).

Regarding claim 16, Duffield discloses the traffic descriptors include the rate limit (each per connection flow is guaranteed its specified share of the link bandwidth (rate) with any excess bandwidth being adaptively redistributed, see col. 3 lines 13-29).

Regarding claim 17, Duffield discloses an apparatus for limiting a rate at which a connection is serviced at a queuing point for a plurality of connections, comprising:

a means to arrange messages from the plurality of connections into a plurality of queues (each queue established for receiving packets from a respective source, see figure 2);

means for determining whether a connection, of the plurality of connections, exceeds a rate limit defined for the connection;

means determining, using a shaper, when the queue containing a message for that connection is to be serviced if the connection exceeds its rate limit (a shaper device, 30a, . . . ,30i associated with each queue, see figure 2 and col. 4 lines 6-27; it should be note that when there are packets in the RPS scheduler, it's determined by the examiner as each connections exceeds their defined rate limit, see col. 4 lines 63-66);

otherwise determining, using a fair scheduler, when the queue containing the message for that connection is to be serviced (if it is determined that there are no packets in the RPS scheduler, then this is an indication of free bandwidth. Thus,

Art Unit: 2661

packets may be served by the SDS 200 based on a state dependent manner, see col. 4 lines 63-66)

Duffield fails to explicitly disclose that the state dependent server 200 is a fair scheduler.

However it would have been obvious to one having ordinary skill in the art at the time of invention was made to switch RPS 40 (weighted fair queuing server 40) with the SDS 200 in Duffield for WFQ scheme provides beneficial properties such as end-to-end delay guarantees, e.g., each packet is guaranteed a certain rate for each packet flow in the stream, and, the provision of isolation between streams, e.g., a misbehaving source will not effect the flow of other streams.

Regarding claim 18, Duffield discloses the plurality of connections have traffic descriptors associated therewith (each per connection flow is guaranteed its specified share of the link bandwidth with any excess bandwidth being adaptively redistributed, see col. 3 lines 13-29).

Regarding claim 19, Duffield discloses the traffic descriptors include the rate limit (each per connection flow is guaranteed its specified share of the link bandwidth (rate) with any excess bandwidth being adaptively redistributed, see col. 3 lines 13-29).

### ***Conclusion***

Art Unit: 2661

**Any response to this action should be mailed to:**

The following address mail to be delivered by the United States Postal Service (USPS) only:

Mail Stop \_\_\_\_\_  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**or faxed to:**

(703) 872-9306, (for formal communications intended for entry)

**Or:**

The following address mail to be delivered by other delivery services (Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, Hand Delivery, etc.) as follow:

U.S. Patent and Trademark Office  
220 20<sup>th</sup> Street South  
Customer Window, Mail Stop \_\_\_\_\_  
Crystal Plaza Two, Lobby, Room 1B03  
Arlington, VA 22202.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Bob A. Phunkulh** whose telephone number is **(571) 272-3083**. The examiner can normally be reached on Monday-Tuesday from 8:00 A.M. to 5:00 P.M. (first week of the bi-week) and Monday-Friday (for second week of the bi-week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor **Chau Nguyen**, can be reach on **(571) 272-3126**. The fax phone number for this group is **(703) 872-9306**.

Art Unit: 2661

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Bob A. Phunkulh**



**BOB PHUNKULH  
PRIMARY EXAMINER**

TC 2600  
Art Unit 2661  
February 01, 2005